

## REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Objections to Claims

The objection to “a list of candidate third element to be alerted to user” has been addressed by substituting –a list of candidate third elements to be provided to a user–. In addition, “usef” in claim 13 has been changed to –user–.

The purpose of the invention is to facilitate editing of a working XML document by a user, and in particular the addition of elements to the document, without violating the DTD or document type definition. This is accomplished by generating a list of elements (referred to as “candidate elements”) that can be added to the document while still complying with the DTD. The user can then refer to the list when selecting elements to be added. Claims 1, 7, and 13 recite this basic principle of giving the user (or document editor) a list of DTD compliant elements so that the user can more easily add elements without having to worry about whether the working document will convert to a valid XML document, while the dependent claims recite the specific algorithms used to generate the list. It is believed that the revised claim language now makes this clear, and that the objections to the claims have therefore been overcome.

2. Rejection of Claims 1-6 and 13-18 Under 35 USC §101

This rejection has been addressed by amending claims 1 and 13 to recite that the software is stored in a computer-readable medium, as suggested in item 7 on pages 2 and 3 of the Official Action.

3. Rejection of Claim 7-12 Under 35 USC §101

This rejection has been addressed by amending claim 7 to positively recite that the user is enabled to more easily edit XML compliant documents, and in addition by reciting that the list of elements that can be added is “provided” to the user, both of which are useful, concrete, and

tangible results. Anyone who has attempted to edit XML documents and found, after completing the additions and deletions, that the XML document obtained upon conversion of the working document is not valid, will appreciate the usefulness of the present invention.

4. Rejection of Claims 1-18 Under 35 USC §103(a) in view of the Cowan *et al.* article “Rita-an editor and user interface. . .” (Rita) and the Bruggermann-Klein article (Bruggermann)

This rejection is respectfully traversed on the grounds that the Rita and Bruggermann articles fail to disclose or suggest determining which elements can be added to a document based solely on relationships between a candidate  $z$  and two DTD compliant elements  $z_i$  and  $z_{i+1}$ , as claimed.

While the Rita article does in fact disclose a method that facilitates text editing, and that uses a finite automaton model to test for compliance (referred to in Rita as “subsequence-incomplete”), the model chosen by Rita is a non-deterministic automaton model that uses multiple shortest path algorithms to maintain the documents “subsequence-incomplete.” This is less efficient and also less complete than the claimed use of the relationship between elements to be added and consecutive compliant elements in the document, by generating a list of candidate third elements  $z$  “in relation to” the consecutive compliant elements  $z_i$  and  $z_{i+1}$  of said working document, “*wherein said third elements  $z$  in said list are selected such that relations between elements  $z_i$  and  $z$  and between elements  $z$  and  $z_{i+1}$  comply with said DTD after said element  $z$  is inserted between elements  $z_i$  and  $z_{i+1}$ .*” While the cited passage in the third paragraph on page 131 of the Rita article implies a candidate list and testing of the elements in the candidate list, as claimed, there is no suggestion that the candidate list is based on relations between the candidates and consecutive compliant elements in the document. In other words, the Rita article has the same objective as the claimed invention, namely facilitating editing by providing a list of candidate elements that are compliant or “subsequence-incomplete,” but the way that the elements are tested involves multiple shortest path algorithms rather than the simpler verification of the relations between the candidate elements and consecutive compliant elements carried out by the claimed invention.

The reason that the invention can use simpler algorithms than Rita is that the invention is specific to XML documents, and therefore can make use of the nested multi-level hierarchical structure of XML documents, in which DTD compliance is maintained if relationships between the candidate and two other compliant elements are all compliant. Rita does not consider this possibility and therefore could not have suggested the claimed invention.

The Bruggermann article, on the other hand, does not concern the document editing problem of the claimed invention, or of Rita, but rather is directed to construction of a particular finite state automaton. This happens to be the same automaton as used by the present invention, but there is no suggestion in Bruggermann that the automaton may be used to generate lists of candidate additions to a document, and no suggestion in Rita of using an automaton of the type constructed by Bruggermann. As a result, one of ordinary skill in the art could not possibly have found it obvious to apply the automaton of Bruggermann to the document editing of Rita. The specific automaton taught by Bruggermann will not work in the context of Rita, though it works narrower XML context of the claimed invention, because Rita seeks to facilitate editing of documents other than XML documents—including documents that lack the nested multi-level hierarchical structure that makes possible the claimed selection of candidate elements based on the claimed relations between elements.

The Examiner is reminded that, as explained in MPEP 2141.02, p. 2100-107, “A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention”(emphasis in the original). It is respectfully submitted that, when considering the Rita article as a whole, the ordinary artisan would have notice that it is directed to document types other than just XML documents, and therefore would not have considered using the claimed use of consecutive compliant elements to generate a candidate list based on the teachings of Bruggermann.

In summary, because the Rita article teaches the general problem addressed by the present invention but not the same solution, and because the teachings of Bruggermann cannot be used

Serial Number 10/601,521

in the specific solution taught by Rita, it is respectfully submitted that the Rita and Bruggermann articles fail to suggest, whether considered individually or in any reasonable combination, the claimed invention and withdrawal of the rejection under 35 USC §103(a) is respectfully requested.

Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

BACON & THOMAS, PLLC

A handwritten signature in black ink, appearing to read 'B. Urcia', with a long horizontal flourish extending to the right.

By: BENJAMIN E. URCIA  
Registration No. 33,805

Date: May 23, 2007

BACON & THOMAS, PLLC  
625 Slaters Lane, 4th Floor  
Alexandria, Virginia 22314

Telephone: (703) 683-0500

NWB:S:\Producer\ben\Pending L...PK\KUO 601521\w01.wpd